Air Quality Analysis
In Support of a Major New Source

Texas GulfLink, LLC
Texas GulfLink Project
Brazoria County, Texas

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May 30, 2019

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1.0 PROJECT OVERVIEW

Sentinel Midstream LLC (Sentinel) proposes to construct and operate an offshore Deepwater Port Facility and the related infrastructure capable of transporting crude oil internationally via Very Large Crude Carrying (VLCC) vessels. This will be accomplished through the construction and operation of the proposed Texas GulfLink Deepwater Project consisting of shore based crude oil storage tanks, a 42" pipeline connecting the onshore storage facility to the offshore loading facility, a fully manned offshore loading platform, and two single point mooring (SPM) buoys to accommodate deep draft tankers that can export US produced crude oil to international markets. Figure 1 is a site location map showing the location of the proposed Deepwater Port Facility.

A New Source Review (NSR) applicability evaluation for the offshore Deepwater Port facility demonstrates that proposed new emissions of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) exceed NSR *de minimis* emission levels. Therefore, the Deepwater Port Facility will be a major source of emissions under NSR. As such, the proposed project requires a federal Prevention of Significant Deterioration (PSD) construction permit following the requirements of 40 CFR 52.21 and a federal Title V operating permit following the requirements of 40 CFR 71. Both the PSD and Title V permit applications are being submitted under separate cover.

The modeling performed is in support of PSD permit application, and the analyses described herein meet the requirements of 40 CFR 52.21(k). Additionally, the modeling analyses meet National Environmental Policy Act (NEPA) requirements to demonstrate that the proposed operations associated with the Deepwater Port will not result in a violation of the National Ambient Air Quality Standards (NAAQS). As part of NEPA guidance, modeling was performed to account for direct, indirect, and cumulative impacts from the Texas GulfLink Project to satisfy the requirements of the June 2011 *Memorandum of Understanding regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through the NEPA Process.* Finally, the modeling analyses follows the requirements of the Bureau of Ocean Energy Management's (BOEM) Gulf of Mexico Region (GOMR) air dispersion modeling guidelines (January 2018), which references Appendix W of 40 CFR 51 requirements for conducting the modeling and preparing the report.

Per Deepwater Port Act regulations (33 CFR 148.5), vessels are not considered primary/direct sources of emissions from the Project for Clean Air Act new source review regulatory applicability. Therefore, the modeling analyses address emissions from sources with an indirect impact (e.g. emissions from the VLCC itself, and other emission sources on the VLCC deck) to address the requirement of direct, indirect, and cumulative impacts from the Project.

This report summarizes a dispersion modeling assessment of air quality impacts on the shoreline of the Texas maritime boundary from the Texas GulfLink Deepwater Port activities, in accordance with the BOEM Guidelines referenced above. The Deepwater Port (DWP) Act specifically requires that the US EPA have jurisdiction over any DWP facility. The primary purpose of this dispersion modeling analysis is to assess the modeling impacts on the shoreline of the Texas maritime boundary, because Texas is the "nearest adjacent coastal state" to the project area, in accordance with the DWP Act.

2.0 POLLUTANTS TO BE MODELED

For the modeling analysis, the estimated potential emissions from emission sources associated with the SPM buoys system operations (including indirect impacts from the carrier itself and other emissions sources on the carrier) and the platform were included. The estimated potential maximum hourly emissions from these sources have been utilized for the short-term and annual averaging period models in this dispersion modeling analysis. This modeling approach results in conservative estimates of modeling impacts, especially for averaging periods other than the 1-hour averaging period (i.e., 3-hour, 8-hour, 24-hour, and annual averaging period models).

PM_{10} emissions rates have been utilized to model all particulate matter ($PM_{10}/_{2.5}$) concentrations. The $PM_{2.5}$ 24-hr Significant Impact Level (SIL) is 1.2 μg/m^3, and the PM_{10} 24-hr SIL is 5.0 μg/m^3. Since the same set of emissions sources emit $PM_{2.5}$ and PM_{10} in this analysis, PM_{10} modeling impacts are also considered to be insignificant if the $PM_{2.5}$ impacts are insignificant (i.e., if $PM_{2.5}$ modeled impacts are less than 1.2 μg/m^3, then the same magnitude of emissions as PM_{10} should be less than 5.0 μg/m^3).

For this modeling analysis, NO_x was modeled using the Tier 1 method from the September 30, 2014 US EPA Guidelines[1] whereas all NO_x emitted is modeled as NO_2 (i.e., full conversion of nitric oxide (NO) to NO_2). This is a conservative approach as the majority of NO_x emissions are in the form of NO rather than NO_2.

The types of emission sources that were modeled for the Texas GulfLink Project consist of combustion sources from the platform and the Very Large Crude Carrier (VLCC) operations including generators, cranes, and emergency equipment on the platform, and the Carrier main and auxiliary engines, boilers and crane engines on the VLCC. Also included in the model analysis are support vessels including pilot boats, escort tugs, service support boats and line hose boats. Stack height and other related modeling stack parameters are based on similar equipment that exist in the industry. A worst-case scenario was modeled which included one VLCC moored at the buoy while loading operations are occurring and VLCC transiting into the safety zone with support vessels.

Proposed emergency equipment including generator engines and firewater pumps will be permitted to operate less than 100 hours per year. Because the engines will only be tested less than one hour in any 24-hour period, the engines were modeled based on their annual average rate instead of the short-term maximum hourly rate. This is in accordance with the 2018 BOEM Modeling Guidance and EPA's guidance for intermittent sources[2]. Table 2-1 shows the model input (maximum hourly) emission rates for the proposed sources of air emissions.

[1] Memorandum, Clarification on the Use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard, US EPA, September 30, 2014.
[2] Memorandum, Additional Clarification regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard, March 1, 2011.

Table 2-1: Stack Parameters and Modeled Emission Rates

Source ID	Source Description	Latitude Decimal Degrees	Longitude Decimal Degrees	Base Elevation (m)	Stack Height Above Platform or Water[1] (ft)	Temperature (°F)	Exit Velocity (fps)	Stack Diameter (ft)	$PM_{2.5}$ Emissions (lb/hr)	NO_x Emissions (lb/hr)	CO Emissions (lb/hr)	SO_2 Emissions (lb/hr)
PLATFORM SOURCES												
G1	Generator 1	28.555329	95.029611	30	20	800	130	0.5	0.17	3.22	3.05	1.09
G2	Generator 2	28.555329	95.029611	30	20	800	130	0.5	0.17	3.22	3.05	1.09
C1	Crane 1	28.556294	95.026589	30	40	850	160	0.6	0.19	3.58	3.39	1.21
C2	Crane 2	28.556294	95.026589	30	40	850	160	0.6	0.19	3.58	3.39	1.21
FWP1	Firewater Pump	28.554381	95.029375	30	10	883	239	0.51	0.77	0.12	2.34	0.72
FWP2	Firewater Pump	28.554381	95.029375	30	10	883	239	0.51	0.77	0.12	2.34	0.72
SPM 1 - LOADING												
CME1	Carrier Main Engine	28.541568	94.999672	0	190	600	152	3.28	12.77	337.30	30.55	7.30
CAE1	Carrier Aux Engines	28.541568	94.999672	0	190	600	152	3.28	3.16	107.06	35.64	4.50
CB	Carrier Boiler	28.541568	94.999672	0	190	600	152	3.28	8.43	61.29	12.77	36.26
CE	Crane Engine	28.541568	94.999672	0	190	850	160	0.6	0.60	19.95	6.78	0.86
SPM 2 - TRANSITTING												
CME2	Carrier Main Engine	28.526418	95.029414	0	190	600	152	3.28	5.11	134.92	12.22	2.92
PB	Pilot Boat	28.526418	95.029414	0	35	450	60	1.2	3.51	23.79	39.60	5.00
ET1	Escort Tug No. 1	28.526418	95.029414	0	27	300	2133	1.5	3.75	99.09	42.24	5.34
ET2	Escort Tug No. 2	28.526418	95.029414	0	27	300	2133	1.5	0.94	24.77	10.56	1.33
SSB	Service Support Boat	28.526418	95.029414	0	35	450	60	1.2	1.04	22.19	17.26	1.46
LHB	Line Hose Boat	28.526418	95.029414	0	35	450	60	1.2	0.89	19.02	14.80	1.25

[1] Based on base elevation designation.

3.0 METHODOLOGY

3.1 OCD Model

Dispersion modeling was performed using the Offshore and Coastal Dispersion (OCD) model (Version 5.0, November 1997). This model simulates effects of offshore emissions from point, area, or line sources on the air quality of coastal regions and is preferred for analyzing over-water pollutant transport. The OCD Model has been approved by BOEM, as documented in their January 2018 Modeling Guidelines.

Averaging periods for each of the pollutants modeled, along with their significance level, monitoring exemption level, increment consumption standard, and NAAQS are shown in Table 3-1.

Table 3-1: PSD Significance, Monitoring De Minimis, Increment Consumption, and NAAQS

Averaging Period	$PM_{2.5}$ (ug/m^3)	PM_{10} (ug/m^3)	NOx (ug/m^3)	SO_2 (ug/m^3)	CO (ug/m^3)
	Significance Level				
Annual	**0.2**	**1**	**1**	**1**	---
24-hour	**1.2**	**5**	---	**5**	---
8-hour	---	---	---	---	**500**
3-hour	---	---	---	**25**	---
1-hour	---	---	**7.5**	**7.8**	**2,000**
	Monitoring De Minimis Concentration				
Annual	---	---	**14**	---	---
24-hour	**0** [1]	**10**	---	**13**	---
8-hour	---	---	---	---	**575**
1-hour	---	---	---	---	---
	Increment Consumption Standard				
Annual	**4**	**17**	**25**	**20**	---
24-hour	**9**	**30**	---	**91**	---
8-hour	---	---	---	---	---
3-hour	---	---	---	**512**	----
1-hour	---	---	---	---	----
	NAAQS				
Annual	**12**	---	**100**	**80**	---
24-hour	**35**	**150**	---	**365**	---
8-hour	---	---	---	---	**10,000**
3-hour	---	---	---	**1300**	---
1-hour	---	---	**188**	**196**	**40,000**

[1] The Monitoring De Minimis Concentration for $PM_{2.5}$ 24-hour averaging period was vacated in January 2013.

3.2 Meteorological Data

The OCD model requires both over-land and over-water meteorological data. The following meteorological dataset has been preprocessed by BOEM in accordance with the Five-*Year Meteorological Datasets for CALMET/CALPUFF and OCD5 Modeling of the Gulf of Mexico Region*[3] and used in the modeling analysis:

- OCD Group: 3a (i.e., northeastern portion of the Texas Gulf Coast)
- Buoy: 42035
- Surface data: Port Arthur National Weather Service (NWS) Station
- Upper-air data: Lake Charles NWS Station

This dataset was chosen based on the proximity of the surface stations. The proposed Project will be located nearer the Port Arthur, TX station than the Corpus Christi, TX station. The dataset includes buoy, onshore surface, and onshore upper-air sites pre-processed for OCD5 meteorological input data files. For the modeling analyses, five consecutive years of meteorological data, from 2000-2004, were used.

3.3 Receptor Grid

Consistent with the BOEM Guidelines, discrete receptors spaced three miles apart have been placed along the Texas shoreline closest to the location of the SPM operations as shown in Figure 2. According to the BOEM Guidance, "*There should be a higher number of receptors placed in areas along the shoreline where there are the highest concentrations and possible exceedances of the applicable standards*." Therefore, a few fine grid receptors were also added at approximate 1 to 2 km spacing between the discrete receptors, as shown in Figure 2, to add to the conservatism built into the dispersion modeling analysis. This methodology has been approved for modeling in the western Gulf of Mexico (GOM) during prior submittals by BOEM. Therefore, the modeling analysis was performed using this receptor grid placement technique.

3.4 Terrain

As the proposed Deepwater Port Facility emissions source is located in the GOM, and corresponding receptors will be along the Texas shoreline, the entire modeling domain will be located completely over water in the Gulf of Mexico. According to BOEM Guidance, overwater and shoreline is considered flat. Therefore, the elevations for receptors will be set to zero for the modeling analysis.

[3] Five-Year Meteorological Datasets for CALMET/CALPUFF and OCD5 Modeling of the Gulf of Mexico Region, OCS Study, MMS 2008-029, New Orleans, July 2008.

3.5 Building Downwash

Building downwash accounts for the effects of nearby structures on the flow of emissions from their respective release structures. For this modeling analysis, typical platform building heights and dimensions were input. Base elevations for the platform buildings were the height of the platform above the water. For the VLCCs, the ship dimensions and heights were entered as a building with the baseline height at water level, or zero elevation.

4.0 MODELING ANALYSIS

Screening runs were conducted to determine whether the net emission increase of each pollutant could cause a significant impact and whether pre-construction monitoring is required.

In the significant impact analysis, the project emissions of NO_x, CO, $PM_{10}/PM_{2.5}$, and SO_2 were evaluated to determine whether they have the potential for a significant impact upon the Texas shoreline. The project emissions for each pollutant and applicable averaging period were modeled and compared to the pollutant's significant impact level (SIL).

As a result of the US Court of Appeals decision to vacate and remand 40 CFR 51.166(k)(2) based on US EPA's lack of authority to exempt sources from the requirements of the Federal Clean Air Act when it established SILs for $PM_{2.5}$, an analysis was conducted to justify the use of the SILs in the screening analysis. This analysis was based on comparing the difference between the NAAQS and the measured background concentrations to the SIL. If the difference between the NAAQS and the background concentration is greater than the SIL, it is concluded that the SIL is acceptable to be used to determine if a cumulative impact analysis is necessary. The analysis is as follows:

Table 4-1: $PM_{2.5}$ SIL Justification

$PM_{2.5}$ Averaging Period	NAAQS (ug/m^3)	Galveston Monitor 48-167-1034 Average 2016 through 2018 (ug/m^3)	Difference (NAAQS – Monitor) (ug/m^3)	$PM_{2.5}$ SIL (ug/m^3)	Greater Than SIL?
24-Hour	35	22.3	12.7	1.2	Yes
Annual	12	6.8	5.2	0.3	Yes

Per US EPA guidance, all predicted impacts for annual NO_2, $PM_{10}/PM_{2.5}$, and SO_2 are reported as the high-first-high of the modeled concentrations predicted each year at each receptor based on five years of National Weather Service (NWS) overland meteorological data and buoy overwater meteorological data.

Per US EPA guidance, in the screening analysis, predicted impacts for 1-hour NO_2, 24-hour $PM_{2.5}$, and 1-hour SO_2 are reported as the highest of the five-year averages of the maximum modeled concentrations predicted each year at each receptor based on five years of meteorological data. While the NAAQS for annual PM_{10} has been revoked, the annual PM_{10} PSD increment standard remains in effect. Therefore, a comparison to the SIL for annual PM_{10} was performed to determine if an annual PM_{10} PSD increment analysis is required.

For the remaining pollutants/averaging time combinations (CO 1-hour and 8-hour, PM_{10} 24-hour, and SO_2 3-hour and 24-hour), predicted impacts are reported as the high-first-high of the modeled concentrations predicted each year at each receptor based on five years of meteorological data.

As part of the assessment of off-site impacts from $PM_{2.5}$, secondary formation of $PM_{2.5}$ attributed to emissions of SO_2 and NO_x must be addressed. The US EPA has developed a method to estimate single source impacts of secondary pollutants as a Tier 1 approach. This assessment is contained in the US EPA's guidance document for using the Modeled Emission Rates for Precursors (MERPs) approach.[4] As described in more detail in Section 5.0 of this report, the guidance uses existing empirical relationships between precursors and secondary impacts. A MERP is defined as an emission rate of a precursor that is expected to result in a change in the ambient ozone or $PM_{2.5}$ that would be less than a specific air quality concentration threshold for ozone or $PM_{2.5}$. MERPs for each precursor may be based on either the most conservative (lowest) values across a region/area or the source-specific value derived from a more similar hypothetical source modeled by a permit applicant, permitting authority, or US EPA.

4.1 Preconstruction Monitoring De Minimis Levels

The results of the preliminary analysis were compared to the preconstruction monitoring exemption levels. The results indicated no concentrations equal to or greater than the monitoring exemption level. The significant monitoring concentration level for the 24-hour averaging period for $PM_{2.5}$ was vacated in January 2013, essentially establishing the level as zero. As a result, $PM_{2.5}$ data from the EPA Galveston monitoring station was used to address the preconstruction monitoring requirements.

4.2 Carbon Monoxide (CO) Modeling

The maximum concentrations predicted by the screening modeling runs for CO are shown in Table 4-2. The modeling results indicate that the maximum shoreline concentrations of CO were below the respective PSD modeling significant impact levels and preconstruction monitoring exemption levels. Therefore, a cumulative impact analysis for CO was not required.

[4] *Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ Under the PSD Permitting Program* (EPA-454/R-16-006, December 2016).

Table 4-2: Screening Analysis Results for CO

Pollutant	Meteorological Year	Averaging Period	Modeled Concentration (ug/m^3)	Significant Impact Level (ug/m^3)	Monitoring Exemption Level (8-hour) (ug/m^3)
CO	2000	1-Hour	16.89	2,000	NA
CO	2001	1-Hour	14.35	2,000	NA
CO	2002	1-Hour	12.63	2,000	NA
CO	2003	1-Hour	12.93	2,000	NA
CO	2004	1-Hour	15.10	2,000	NA
CO	2000	8- Hour	4.51	500	575
CO	2001	8- Hour	5.25	500	575
CO	2002	8- Hour	3.87	500	575
CO	2003	8- Hour	4.3	500	575
CO	2004	8- Hour	3.95	500	575

4.3 Nitrogen Dioxide (NO_2) Modeling

The maximum concentrations predicted by the screening modeling runs for NO_2 are shown in Table 4-3. The modeling results for the 1-hour NO_2 averaging period indicate that the maximum off-site concentrations were above the PSD modeling significant impact level. Therefore, a cumulative impact analysis for NO_2 was required.

Results of the annual averaging period are below the SIL and the monitoring exemption level. Therefore, a cumulative impact analysis and preconstruction monitoring is not required for the annual averaging period.

Table 4-3: Screening Analysis Results for NO_2

Pollutant	Meteorological Year	Averaging Period	Modeled Concentration (ug/m^3)	Significance Impact Level (ug/m^3)	Monitoring Exemption Level (ug/m^3)
NO_2	2000 - 2004	1-Hour 5-Year Avg	32.49	7.5	NA
NO_2	2000	Annual	0.44	1	14
NO_2	2001	Annual	0.36	1	14
NO_2	2002	Annual	0.42	1	14
NO_2	2003	Annual	0.40	1	14
NO_2	2004	Annual	0.42	1	14

The nearest representative onshore NO_2 monitor concentrations were added to the Project modeled concentrations. As shown in Table 4-4, the combined concentrations demonstrate that the Project is in compliance with the 1-hour NAAQS for NO_2.

Table 4-4: Refined Analysis Results for NO_2

Pollutant	Meteorological Year	Averaging Period	Modeled Concentration (ug/m^3)	Background Concentration (ug/m^3)	Total Cumulative Concentration (ug/m^3)	NAAQS (24-hour) (ug/m^3)
NO_2	2000 - 2004	1-Hour 5-Year Avg	32.49	35.2	67.7	188

4.4 Particulate Matter (less than 10 micron) (PM_{10})/$PM_{2.5}$ Modeling

The maximum concentrations predicted by the screening modeling runs for PM_{10}/$PM_{2.5}$ are shown in Table 4-5. The modeling results for both PM_{10}/$PM_{2.5}$ averaging periods, 24-hour and annual, indicate that the maximum off-site concentrations are below the PSD modeling significant impact levels. Therefore, a cumulative impact analysis is not required for these averaging periods. In addition, results of the PM_{10} screening analysis showed no exceedances of the monitoring exemption level for the 24-hour averaging period. As such, a preconstruction monitoring analysis is not required for this pollutant.

Table 4-5: Screening Analysis Results for PM_{10}/$PM_{2.5}$

Pollutant	Meteorological Year	Averaging Period	Modeled Concentration (ug/m^3)	Significance Impact Level (ug/m^3)	Monitoring Exemption Level (24-hour) [1] (ug/m^3)
PM_{10}/$PM_{2.5}$	2000	24-Hour	0.32	5/1.2	10
PM_{10}/$PM_{2.5}$	2001	24-Hour	0.31	5/1.2	10
PM_{10}/$PM_{2.5}$	2002	24-Hour	0.22	5/1.2	10
PM_{10}/$PM_{2.5}$	2003	24-Hour	0.28	5/1.2	10
PM_{10}/$PM_{2.5}$	2004	24-Hour	0.28	5/1.2	10
$PM_{2.5}$ 5-year Avg	2000-2004	24-Hour	0.28	1.2	NA
PM_{10}/$PM_{2.5}$	2000	Annual	0.02	1/0.2	NA
PM_{10}/$PM_{2.5}$	2001	Annual	0.02	1/0.2	NA
PM_{10}/$PM_{2.5}$	2002	Annual	0.02	1/0.2	NA
PM_{10}/$PM_{2.5}$	2003	Annual	0.02	1/0.2	NA
PM_{10}/$PM_{2.5}$	2004	Annual	0.02	1/0.2	NA
$PM_{2.5}$ 5-year Avg	2000-2004	Annual	0.02	0.2	NA

[1] PM_{10}

4.5 Sulfur Dioxide (SO_2) Modeling

The maximum concentrations predicted by the screening modeling runs for SO_2 are shown in Table 4-6. The modeling results indicate that the maximum shoreline concentrations of SO_2 were below the respective PSD modeling significant impact levels and preconstruction monitoring exemption levels. Therefore, a cumulative impact analysis for SO_2 was not required.

Table 4-6: Screening Analysis Results for SO_2

Pollutant	Meteorological Year	Averaging Period	Modeled Concentration (ug/m^3)	Significant Impact Level (ug/m^3)	Monitoring Exemption Level (ug/m^3)
SO_2	2000	1-Hour	3.54	7.8	NA
SO_2	2001	1-Hour	3.08	7.8	NA
SO_2	2002	1-Hour	2.79	7.8	NA
SO_2	2003	1-Hour	2.64	7.8	NA
SO_2	2004	1-Hour	3.32	7.8	NA
SO_2	2000	3- Hour	1.75	25	NA
SO_2	2001	3- Hour	1.76	25	NA
SO_2	2002	3- Hour	1.63	25	NA
SO_2	2003	3- Hour	1.41	25	NA
SO_2	2004	3- Hour	1.36	25	NA
SO_2	2000	24-Hour	0.53	5	13
SO_2	2001	24-Hour	0.47	5	13
SO_2	2002	24-Hour	0.38	5	13
SO_2	2003	24-Hour	0.47	5	13
SO_2	2004	24-Hour	0.47	5	13
SO_2	2000	Annual	0.04	1	NA
SO_2	2001	Annual	0.03	1	NA
SO_2	2002	Annual	0.04	1	NA
SO_2	2003	Annual	0.03	1	NA
SO_2	2004	Annual	0.04	1	NA

4.6 Background Air Quality Data and Preconstruction Monitoring

The results of the preliminary analysis were compared to the preconstruction monitoring exemption levels, where applicable. The results indicated no concentrations equal to or greater than the monitoring exemption level. The significant monitoring concentration level for the 24-hour averaging period for $PM_{2.5}$ was vacated in January 2013, essentially establishing the level as zero. As a result, TGL proposes to use $PM_{2.5}$ data from the EPA Galveston monitoring station to address the preconstruction monitoring requirements.

Monitoring data was also used to establish background concentrations required for the NAAQS analysis. Site-specific ambient air monitoring data are not available. Therefore, US EPA's AirData system was used to obtain background ambient concentrations of affected pollutants. This data was taken from the US EPA monitoring data website at: http://www.epa.gov/airquality/airdata/. Because a cumulative impact analysis was required for NO_2 (1-hour average), existing monitoring data from the Lake Jackson air monitoring facility was used. Ozone background concentrations, which were used in the Ozone Impacts analysis in Section 7.0 of this report, were also derived from the Lake Jackson monitor.

The monitor chosen was reviewed for sufficient data to meet the completeness criteria. A year meets the completeness criteria if at least 75% of the scheduled samples per quarter are reported. The most recent three consecutive available years, 2016 through 2018 were analyzed. Information on the monitoring station used is shown in Table 4-7.

Table 4-7: Monitoring Data

Pollutant	Averaging Period	Monitor Station Name	Station Number	Background Concentration (ug/m^3) (2016 – 2018)	Form of Concentration Average
$PM_{2.5}$	24-hour	Galveston Monitor	48-167-1034	22.3	98th Percentile ug/m^3
	Annual			6.8	Annual Average ug/m^3
NO_2	1-hour	Lake Jackson Monitor	48-039-1016	35.2	98th Percentile ug/m^3
Ozone	8-hour	Lake Jackson Monitor	48-039-1016	66	99th Percentile ppb

5.0 $PM_{2.5}$ SECONDARY FORMATION

As part of the assessment of off-site impacts from $PM_{2.5}$, secondary formation of $PM_{2.5}$ attributed to emissions of SO_2 and NO_x must be addressed. As previously described, the US EPA has developed a method to estimate single source impacts of secondary pollutants as a Tier 1 approach. This assessment is contained in the previously referenced US EPA's guidance document on modeling using the MERPs approach. The guidance uses existing empirical relationships between precursors and secondary impacts. A MERP is defined as an emission rate of a precursor that is expected to result in a change in the ambient ozone or $PM_{2.5}$ that would be less than a specific air quality concentration threshold for ozone or $PM_{2.5}$. MERPs for each precursor may be based on either the most conservative (lowest) values across a region/area or the source-specific value derived from a more similar hypothetical source modeled by a permit applicant, permitting authority, or US EPA.

For $PM_{2.5}$ 24-hour precursor assessment, SO_2 and NO_x emissions are above the level of the significant emission rate requiring a PSD compliance demonstration. The proposed NO_x and SO_2 emissions from the project, in tons per year (TPY), were compared to Table 7.1 of the guidance document, *Table 7.1 Most Conservative (lowest) Illustrative MERP Values (tons per year) by Precursor, Pollutant and Region.* For the Central US, the lowest NO_x MERP for daily PM is 1,820 tons per year (TPY). The NO_x emissions from the proposed Texas GulfLink Project are well below this value. Therefore, air quality impacts of $PM_{2.5}$ from NO_x would be expected to be below the critical air quality concentration (CAC) threshold (defined as the SIL in this analysis). For the Central US, the lowest SO_2 MERP for daily PM is 256 TPY. The SO_2 emissions from the Project are well below this value. Therefore, air quality impacts of $PM_{2.5}$ from SO_2 would be expected to be below the critical air quality threshold.

For $PM_{2.5}$ annual precursor assessment, the proposed NO_x and SO_2 emissions from the project in TPY were compared to Table 7.1 of the guidance document, *Table 7.1 Most Conservative (lowest) Illustrative MERP Values (tons per year) by Precursor, Pollutant and Region.* For the Central US, the lowest NO_x MERP for annual PM is 7,427 TPY. The NO_x emissions from the Project are well below this value. Therefore, air quality impacts of $PM_{2.5}$ from NO_x would be expected to be below the critical air quality threshold. For the Central US, the lowest SO_2 MERP for annual PM is 1,795 TPY. The SO_2 emissions from the Project are well below this value. Therefore, air quality impacts of $PM_{2.5}$ from SO_2 would be expected to be below the critical air quality threshold.

In addition, the SO_2 and NO_x precursor contributions to both daily average and annual $PM_{2.5}$ are considered together to determine if the Project's air quality impact of $PM_{2.5}$ would exceed the critical air quality threshold. This analysis is shown below:

Project Emissions:

Project NO_x Emissions – 688.61 TPY
Project SO_2 Emissions – 68.14 TPY

Cumulative Impacts for Daily $PM_{2.5}$:

688.61TPY/1,820 TPY + 68.14TPY/ 256 TPY = 0.64 or 64% of the CAC

Cumulative Impacts for Annual $PM_{2.5}$:

688.61TPY/7,427 TPY + 68.14TPY/ 1,795 TPY = 0.13 or 13% of the CAC

Results indicate that the proposed precursor emissions from the project expressed as a percent of the lowest (most conservative) MERP and summed is less than 100% indicating that the CAC threshold would not be exceeded when considering the additive impacts of these precursors.

As a last step to determine the total impacts of $PM_{2.5}$ (primary and precursors), the primary impacts need to be added to the precursor impacts. This analysis is shown below:

Daily Primary $PM_{2.5}$ contributions from Modeled Results plus Precursor Contributions:

Modeled 24-hour 5-year average – 0.28 ug/m^3
$PM_{2.5}$ 24-hour SIL – 1.2 ug/m_3
Therefore, 0.28/1.2 = 0.23 or 23% of the CAC

23% primary $PM_{2.5}$ contribution + 64% precursor contribution = 87%

Annual Primary $PM_{2.5}$ contributions from Modeled Results plus Precursor Contributions:

Modeled Annual 5-year average – 0.02 ug/m^3
$PM_{2.5}$ Annual SIL – 0.2 ug/m^3
Therefore, 0.02/0.2 = 0.10 or 10% of the CAC

10% primary $PM_{2.5}$ contribution + 13% precursor contribution = 23%

This analysis demonstrates that the total $PM_{2.5}$ impacts (primary and precursor) are below the CAC or the SIL.

6.0 VISIBILITY IMPAREMENT ANALYSIS

The US EPA's workbook on visual impact screening[5] provides guidance for conducting impairment analysis using the US EPA VISCREEN model. A visibility analysis was conducted using US EPA's VISCREEN model on the nearest Class II area, which is the San Bernard National Wildlife Refuge. This area is approximately 68 kilometers from the proposed Texas GulfLink Project.

A Level 1 analysis was conducted using the Project's potential tons per year (TPY) emission rate for particulate matter ($PM_{10/2.5}$) and nitrogen oxides (NOx) that could occur simultaneously. Based on regulatory guidance related to Level 1 analysis, all default options in the model were used. Level 1 screening is designed to provide a conservative estimate of plume visual impacts based on worst-case meteorological conditions: stable atmosphere ("F" Stability), wind speed of 1 meter per second (m/s) persisting for 12 hours, with a wind that would transport the plume directly adjacent to the observer.

The results of this conservative Level 1 analysis are that the maximum visual impacts meet the screening criteria. The VISCREEN results are included as Appendix A.

[5] Workbook for Plume Visual Impact Screening and Analysis (Revised), EPA-454/R-92-023, October 1992.

7.0 OZONE IMPACT ANALYSIS

Because VOC and NO_x are precursors to ground-level ozone formation, an ozone impacts analysis was conducted to demonstrate that the proposed Project's NO_x and VOC emissions will not cause a significant increase in ozone levels in the area. A Tier 1 MERP analysis was conducted using the US EPA's guidelines for MERPs, EPA-454/ R-16-006, December 2016 (see Footnote 5 above).

NO_x Assessment

A source-specific value derived from a similar hypothetical source modeled by EPA was determined for potential ozone formation due to Project NO_x as shown below. The CAC used was the difference between the ozone design value and the 3-year average monitoring data from the Lake Jackson monitor:

Proposed Project Emissions: NO_x – 60.69 TPY

Hypothetical source for NO_x – Central US, Source 20, elevated, TPY, FIPS 42801. This source is located in Harris County, Texas.

MERP = 4.0 ppb * (500 TPY/0.78) = **2,564 TPY**

Note that the NO_x emissions described above do not include secondary emissions from tankers and support vessels.

VOC Assessment

A source-specific value derived from a similar hypothetical source modeled by EPA was determined for potential ozone formation due to Project VOC as shown below. The CAC used was the difference between the ozone design value and the 3-year average monitoring data from the Lake Jackson monitor:

Proposed Project Emissions: VOC – 10,025.21 TPY

Hypothetical source for VOC – Central US, Source 20, elevated, TPY, FIPS 42801. This source is located in Harris County, Texas.

MERP = 4.0 ppb * (3000 TPY/1.09) = **11,009 TPY**

Note that the VOC emissions described above do not include secondary emissions from tankers and support vessels.

In addition, the VOC and NO_x precursor contributions to ozone are considered together to determine if the Project's air quality impact of ozone would exceed the critical air quality threshold. This analysis is shown below:

Cumulative Impacts for Ozone:

(60.96 TPY NO_x/2,564 TPY MERP) + (10,025 TPY VOC/11,009 TPY MERP) = 93% of MERP

Results indicate that the proposed precursor emissions from the project is less than 100% indicating that the CAC threshold would not be exceeded when considering the additive impacts of these precursors.

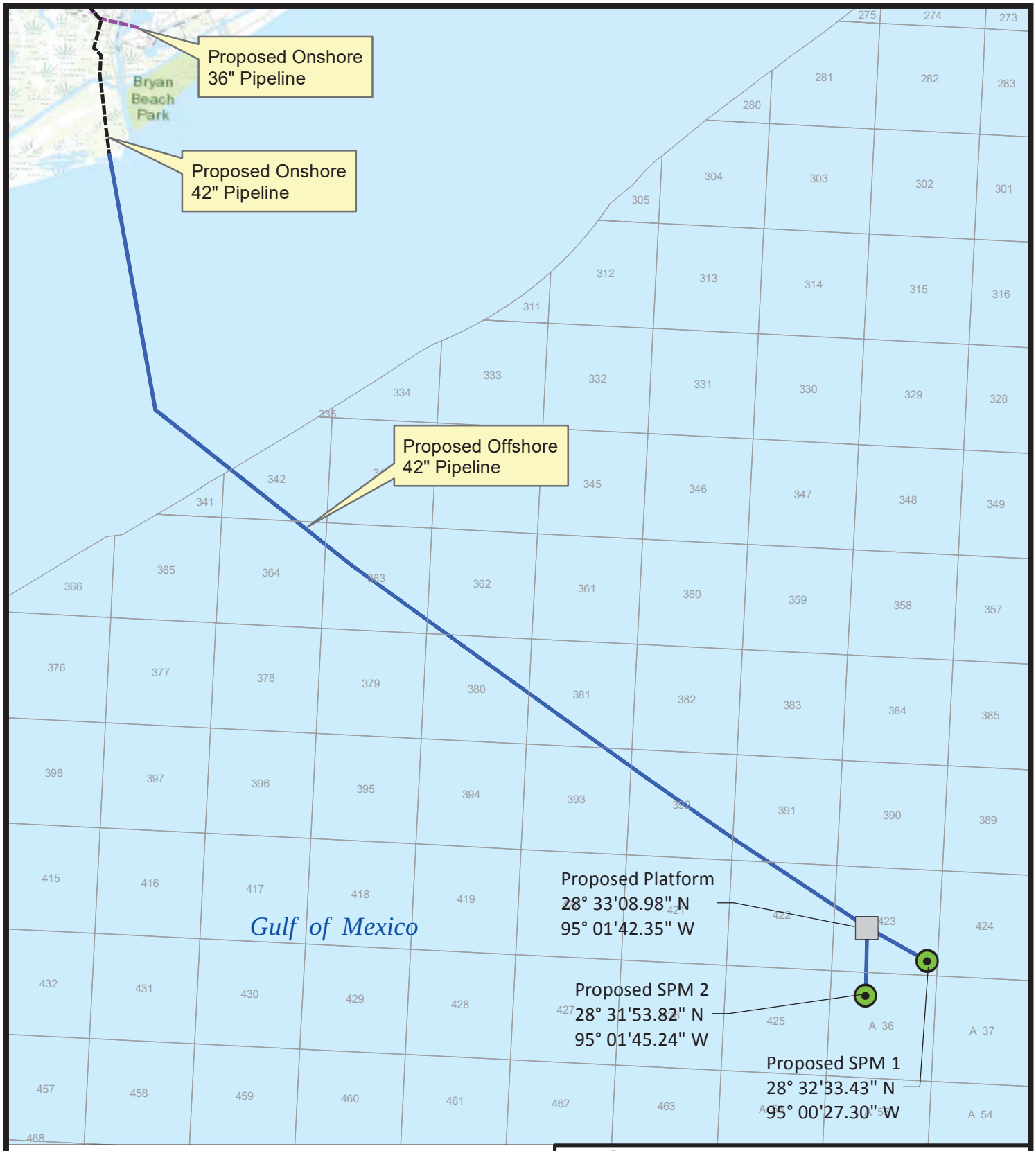
8.0 CLASS I AREA IMPACT ANALYSIS

There are no Class I areas located within 500 kilometers of the Project. The nearest Class I area, Breton National Wildlife Refuge, is located approximately 570 kilometers to the east. Therefore, no Class I analysis was conducted. Given the distance between Breton National Wildlife Refuge and the Project, no Class I increment analysis was conducted.

FIGURES

Figure 1

Offshore Site Location Map



Texas GulfLink, LLC
Dallas, Texas

Texas GulfLink

Offshore Location Map

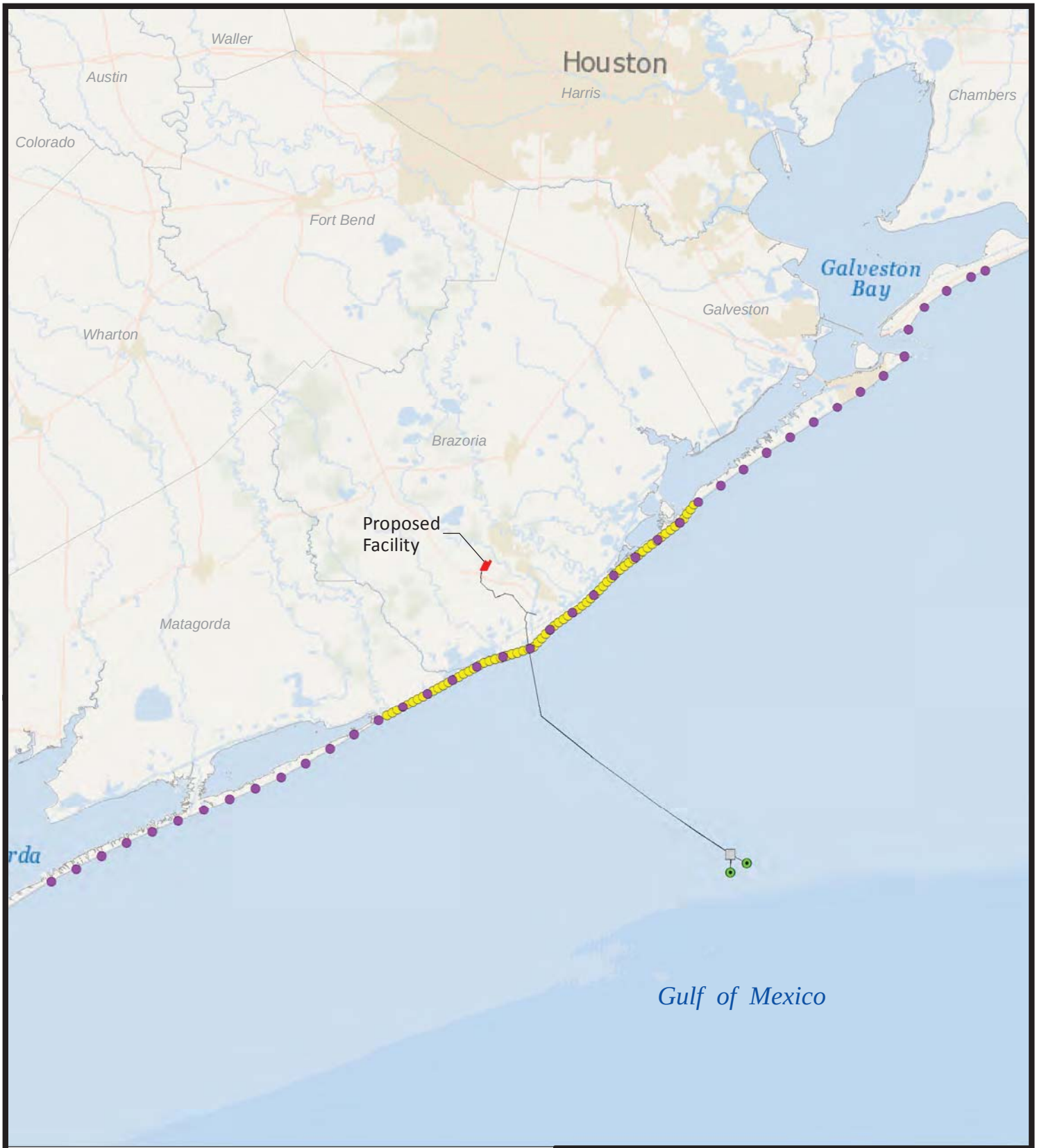
N

0 3
Miles

Drawn: CAL	Checked: JLS
Date: 5/7/2019	Approved: JLS
Dwg. No.: A17073-60	**Figure 1**

Figure 2

Receptor Locations



- 1 km Receptors
- 3 mile Receptors
- Proposed Platform
- Proposed SPM

Texas GulfLink, LLC
Dallas, Texas

Texas GulfLink

Shoreline Receptors

N

0 10
Miles

Drawn:	CAL	Checked:	MEH
Date:	5/13/2019	Approved:	JLS
Dwg. No.:	A17073-89	**Figure 2**	

Appendix A

VISCREEN Printout

```
"TGL DWP                "
"Shoreline              "
    5    5
    27.260   688.610     0.000     0.000     0.000
    68.000    60.000    75.000    20.000
    1     1.500    3
    1     2.500    8
    1     2.500    6
    1     2.000    1
    1     1.500    4
    1     0.040     1.000    6
    1    11.250
 34
  1 0     5.0  163.7   21.2   47.4   56.4 0.32  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
  2 0    10.0  158.7   32.6   36.6   48.4 0.48  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
  3 0    15.0  153.8   39.8   30.0   42.7 0.61  0.050   2.00   0.01   2.00   0.00
2.00   0.00   2.00   0.00
  4 0    20.0  148.8   44.8   25.6   38.5 0.74  0.050   2.00   0.01   2.00   0.00
2.00   0.00   2.00   0.00
  5 0    25.0  143.8   48.6   22.4   35.3 0.87  0.050   2.00   0.02   2.00   0.01
2.00   0.00   2.00   0.00
  6 0    30.0  138.7   51.6   20.1   32.8 0.98  0.050   2.00   0.03   2.00   0.01
2.00   0.00   2.00   0.00
  7 0    35.0  133.7   54.0   18.4   30.9 1.09  0.050   2.00   0.04   2.00   0.01
2.00   0.00   2.00   0.00
  8 0    40.0  128.8   56.0   17.0   29.3 1.18  0.050   2.00   0.05   2.00   0.01
2.00   0.00   2.00   0.00
  9 0    45.0  123.8   57.8   16.0   28.2 1.27  0.050   2.00   0.06   2.00   0.02
2.00   0.00   2.00   0.00
 10 0    50.0  118.8   59.4   15.1   27.3 1.35  0.050   2.00   0.07   2.00   0.02
2.00   0.00   2.00   0.00
 11 1    55.0  113.7   60.9   14.5   26.7 1.42  0.050   2.00   0.07   2.00   0.02
2.00   0.00   2.00   0.00
 12 1    60.0  108.7   62.2   14.0   26.2 1.47  0.050   2.00   0.08   2.00   0.02
2.00   0.00   2.00   0.00
 13 1    65.0  103.8   63.4   13.7   26.0 1.52  0.050   2.00   0.08   2.00   0.03
2.00   0.00   2.00   0.00
 14 1    70.0   98.8   64.7   13.4   26.0 1.55  0.050   2.00   0.09   2.00   0.03
2.00   0.00   2.00   0.00
 15 1    75.0   93.8   65.8   13.3   26.2 1.57  0.050   2.00   0.09   2.00   0.03
2.00   0.00   2.00   0.00
 16 1    80.0   88.8   67.0   13.3   26.7 1.58  0.050   2.00   0.08   2.00   0.03
2.00   0.00   2.00   0.00
 17 1    85.0   83.8   68.1   13.3   27.3 1.58  0.050   2.00   0.08   2.00   0.02
2.00   0.00   2.00   0.00
 18 1    90.0   78.8   69.3   13.5   28.2 1.56  0.050   2.00   0.08   2.00   0.02
```

```
2.00   0.00   2.00   0.00
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2.00   0.00   2.00   0.00
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2.00   0.00   2.00   0.00
 21 1   105.0   63.8   73.2   14.8   32.8 1.45  0.050   2.00   0.06   2.00   0.02
2.00   0.00   2.00   0.00
 22 1   110.0   58.8   74.7   15.5   35.3 1.38  0.050   2.00   0.05   2.00   0.01
2.00   0.00   2.00   0.00
 23 0   115.0   53.8   76.4   16.5   38.5 1.31  0.050   2.00   0.04   2.00   0.01
2.00   0.00   2.00   0.00
 24 0   120.0   48.8   78.3   17.6   42.7 1.23  0.050   2.00   0.03   2.00   0.01
2.00   0.00   2.00   0.00
 25 0   125.0   43.8   80.6   19.2   48.4 1.14  0.050   2.00   0.02   2.00   0.01
2.00   0.00   2.00   0.00
 26 0   130.0   38.8   83.2   21.2   56.4 1.04  0.050   2.00   0.01   2.00   0.00
2.00   0.00   2.00   0.00
 27 0   135.0   33.8   86.5   23.9   68.0 0.93  0.050   2.00   0.01   2.00   0.00
2.00   0.00   2.00   0.00
 28 0   140.0   28.8   90.9   27.6   86.5 0.81  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
 29 0   145.0   23.8   96.8   32.9  120.2 0.69  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
 30 0   150.0   18.8  105.8   41.3  199.4 0.56  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
 31 0   155.0   13.8  120.9   55.8  596.6 0.42  0.050   2.00   0.00   2.00   0.00
2.00   0.00   2.00   0.00
 32 0     0.2  168.6    1.0   67.0   67.5 0.05  0.058   3.57   0.00   2.00   0.00
3.57   0.00   2.00   0.00
 33 1    52.0  116.8   60.0   14.9   27.0 1.38  0.050   2.00   0.07   2.00   0.02
2.00   0.00   2.00   0.00
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2.00   0.00   2.00   0.00
 34
  1 0   5.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
  2 0  10.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
  3 0  15.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
  4 0  20.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
  5 0  25.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
  6 0  30.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
 0.000  0.000  0.000
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0.000  0.000  0.000
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0.000  0.000  0.000
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0.000  0.000  0.000
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0.000  0.000  0.000
17 1  85.000  0.050  0.000  0.000 -0.001  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
18 1  90.000  0.050  0.000  0.000 -0.001  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
19 1  95.000  0.050  0.000  0.000 -0.001  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
20 1 100.000  0.050  0.000  0.000 -0.001  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
21 1 105.000  0.050  0.000  0.000 -0.001  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
22 1 110.000  0.050  0.000  0.000  0.000  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
23 0 115.000  0.050  0.000  0.000  0.000  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
24 0 120.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
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0.000  0.000  0.000
26 0 130.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
27 0 135.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
28 0 140.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
29 0 145.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
30 0 150.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
31 0 155.000  0.050  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000  0.000
0.000  0.000  0.000
```

TGLDWP

```
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0.000  0.000  0.000
34 1 110.803  0.050  0.000  0.000  0.000  0.000 -0.001  0.000 -0.001  0.000  0.000
0.000  0.000  0.000
```

Volume III

Appendix C

***

TCEQ Non-Rule Standard Permit (NSRP) Application

Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
(Page 1)

I. Registrant Information		
A. Company or Other Legal Customer Name:		
Texas GulfLink, LLC		
B. Company Official Contact Information (☒ Mr. ☐ Mrs. ☐ Ms. ☐ Other:)___		
Name: Jeff Ballard		
Title: President and CEO		
Mailing Address: 8333 Douglas Ave, Ste. 400		
City: Dallas	State: TX	ZIP Code: 75225
Phone: 214-712-2140	Fax:	
E-mail Address: jballard@sentinelmidstream.com		
All permit correspondence will be sent via e-mail.		
C. Technical Contact Information (☒ Mr. ☐ Mrs. ☐ Ms. ☐ Other:)_____		
Name: Tyler Abadie, PE		
Title: Chief Executive Officer		
Company Name: Abadie-Williams		
Mailing Address: 1 Galleria Blvd, Ste. 1680		
City: Metairie	State: LA	ZIP Code: 70001
Phone: (504) 834-3040, x-8421	Fax:	
E-mail Address: tyler@abadie-williams.com		
II. Facility and Site Information		
A. Name and Type of Facility		
Facility Name: Jones Creek Crude Storage Terminal		
Type of Facility: crude storage	☒ Permanent ☐ Temporary	
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	

Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
(Page 2)

II. Facility and Site Information *(continued)*		
B. Facility Location Information		
Street Address:		
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
From Jones Creek, take TX-36 to Highway 304 (Peach Point Rd), turn right, drive for approx 0.8 miles. Property on left.		
City: Freeport	County: Texas	ZIP Code: 77541
Latitude (nearest second): 28.991416667	Longitude (nearest second): -95.472408333	
C. Core Data Form (**required** for Standard Permits 6004, 6006, 6007, 6008, and 6013).		
Is the Core Data Form (TCEQ Form 10400) attached?	☒ YES ☐ NO	
If "NO," provide customer reference number (CN) and regulated entity number (RN) below.		
Customer Reference Number (CN): TBD		
Regulated Entity Number (RN): TBD		
D. TCEQ Account Identification Number (if known): TBD		
E. Type of Action: ☒ Initial Application ☐ Change to Registration ☐ Renewal ☐ Renewal Certification		
For Change to Registration, Renewal, or Renewal Certification actions provide the following:		
Registration Number:	Expiration Date:	
F. Standard Permit Claimed: 6002 (Non-Rule Standard Permit)		
G. Previous Standard Exemption or PBR Registration Number		
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR?	☐ YES ☒ NO	
If "YES," enter previous standard exemption number(s) and PBR registration number(s), and associated effective date in the spaces provided below.		
Standard Exemption and PBR Registration Number(s)	Effective Date	

Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
(Page 3)

II. Facility and Site Information *(continued)*		
H. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit		
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit?	☐ YES ☒ NO	
If "YES," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below.		
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s)	Effective Date	
I. Other Air Preconstruction Permits		
Are there any other air preconstruction permits at this site?	☐ YES ☒ NO	
If "YES," enter permit number(s) in the spaces provided below.		
J. Affected Air Preconstruction Permits		
Does the standard permit directly affect any permitted facility?	☐ YES ☒ NO	
If "YES," enter permit number(s) in the spaces provided below.		
K. Concrete Batch Plant		
☐ Central Mix ☐ Ready Mix ☐ Specialty Mix ☐ Enhanced Controls for Concrete Batch Plants		
1. State Legislators		
State Senator:		
State Representative:		
2. County Judge		
Name:		
Mailing Address:		
City:	State:	ZIP Code:

Texas Commission on Environmental Quality
Form PI-1S
Registrations for Air Standard Permit
(Page 4)

II. Facility and Site Information *(continued)*		
K. 3. Presiding Officer		
Is the facility located in a municipality or extraterritorial jurisdiction of a municipality? ☐ YES ☐ NO		
If "YES," list the name of the Presiding Officer for the municipality and/or extraterritorial jurisdiction:		
Presiding Officer Name:		
Title:		
Mailing Address:		
City:	State:	ZIP Code:
L. Federal Operating Permit (FOP) Requirements		
Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122?	☐ YES ☒ NO ☐ To Be Determined	
If the site currently has an existing FOP, enter the permit number:		
Check the requirements of 30 TAC Chapter 122 that will be triggered if this standard permit is approved (*check all that apply).*		
☐ Initial Application for an FOP	☐ Significant Revision for an SOP	☐ Minor Revision for an SOP
☐ Operational Flexibility/Off Permit Notification for an SOP		☐ Revision for a GOP
☐ To be Determined		☒ None
Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)*		
☐ SOP	☐ GOP	☐ GOP application/revision (submitted or under APD review)
☒ N/A	☐ SOP application/revision (submitted or under APD review)	
III. Fee Information *(see Section IX. for address to send fee or go to www.tceq.texas.gov/epay to pay online)*		
A. Fee Amount: $850		
B. Payment Information		
Check/money order/transaction or voucher number:		
Individual or company name on check: Sentinel Midstream LLC		
Was fee paid online?	☒ YES ☐ NO	

IV. Public Notice *(if applicable)* Not applicable		
A. Responsible Person (☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other:)_____		
Name:		
Title:		
Company:		
Mailing Address:		
City:	State:	ZIP Code:
Phone:	Fax No.:	
E-mail Address:		
B. Technical Contact (☐ Mr. ☐ Mrs. ☐ Ms. ☐ Other):__		
Name:		
Title:		
Company:		
Mailing Address:		
City:	State:	ZIP Code:
Phone No.:	Fax No.:	
E-mail Address:		
C. Bilingual Notice		
Is a bilingual program required by the Texas Education Code in the School District?		☐ YES ☐ NO
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?		☐ YES ☐ NO
If "YES," list which language(s) are required by the bilingual program?		

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IV.	**Public Notice** *(if applicable)* ***(continued)***	
D.	Small Business Classification and Alternate Public Notice	
Does this company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?		☐ YES ☐ NO
Is the site a major source under 30 TAC Chapter 122, Federal Operating Permit Program?		☐ YES ☐ NO
Are the site emissions of any individual regulated air contaminant equal to or greater than 50 tpy?		☐ YES ☐ NO
Are the site emissions of all regulated air contaminant combined equal to or greater than 75 tpy?		☐ YES ☐ NO
E.	For Concrete Batch Plants	
1.	Public Works Project: Will the plant provide concrete to a public works project, and be located in or contiguous to the right of-way of the public works project? (If "YES," public notice is not required.)	☐ YES ☐ NO
2.	Application in Public Place	☐ YES ☐ NO
Name of Public Place:		
Physical Address:		
City:	County:	
V.	**Renewal Certification Option**	
A.	Does the permitted facility emit an air contaminant on the Air Pollutant Watch List, and is the permitted facility located in an area on the watch list?	☐ YES ☐ NO
B.	For facilities participating in the Houston/Galveston/Brazoria area (HGB) cap and trade program for highly reactive VOCs (HRVOCs), do the HRVOCs need to be speciated on the maximum allowable emission rates table (MAERT)?	☐ YES ☐ NO
C.	Does the company and/or site have an unsatisfactory compliance history?	☐ YES ☐ NO
D.	Are there any applications currently under review for this standard permit registration?	☐ YES ☐ NO
E.	Are scheduled maintenance, startup, or shutdown emissions required to be included in the standard permit registration at this time?	☐ YES ☐ NO

V.	**Renewal Certification Option *(continued)***	
F.	Are any of the following actions being requested at the time of renewal:	☐ YES ☐ NO
1.	Are there any facilities that have been permanently shutdown that are proposed to be removed from the standard permit registration?	☐ YES ☐ NO
2.	Do changes need to be made to the standard permit registration in order to remain in compliance?	☐ YES ☐ NO
3.	Are sources or facilities that have always been present and represented, but never identified in the standard permit registration, proposed to be included with this renewal?	☐ YES ☐ NO
4.	Are there any changes to the current emission rates table being proposed?	☐ YES ☐ NO
*Note: If answers to all of the questions in Section V. Renewal Certification Option are "NO," use the certification option and skip to Section VII. of this form. If the answers to any of the questions in Section V. Renewal Certification Option are "YES," the certification option **cannot** be used.*		
*If notice is applicable and comments are received in response to the public notice, the application does not qualify for the renewal certification option.		
VI.	**Technical Information Including State and Federal Regulatory Requirements** **Place a check next to the appropriate box to indicate what you have included in your submittal.** *NOTE: Any technical or essential information needed to confirm that facilities are meeting the requirements of the standard permit must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.*	
A.	Standard Permit requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC Sections 116.610 and 116.615 are met?		☒ YES ☐ NO
Did you demonstrate that emission limitations in 30 TAC Sections 106.261 and 106.262 are met? Not applicable		☐ YES ☒ NO
Did you demonstrate that the individual requirements of the specific standard permit are met?		☒ YES ☐ NO
B.	Confidential Information (All pages properly marked "CONFIDENTIAL")	☐ YES ☒ NO
C.	Process Flow Diagram	☒ YES ☐ NO
D.	Process Description	☒ YES ☐ NO
E.	Maximum Emissions Data and Calculations	☒ YES ☐ NO
F.	Plot Plan	☒ YES ☐ NO

VI. Technical Information Including State and Federal Regulatory Requirements *(continued)* **Place a check next to the appropriate box to indicate what you have included in your submittal.** *NOTE: Any technical or essential information needed to confirm that facilities are meeting the requirements of the standard permit must be provided. Not providing key information could result in an automatic deficiency and voiding of the project*.	
G. Projected Start Of Construction Date, Start Of Operation Date, and Length of Time at Site:	☒ YES ☐ NO
Projected Start of Construction (provide date): 09/01/2020	
Projected Start of Operation (provide date): 06/01/2022	
Length of Time at the Site:	
VII. Delinquent Fees and Penalties	
This form **will not be processed** until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
VIII. Signature Requirements	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382, the Texas Clean Air Act (TCAA) the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name (printed): Jeff Ballard	
Signature (original signature required):	
Date:	

IX. Copies of the Registration		
Copies must be sent as listed below. Processing delays will occur if copies are not sent as noted.		
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail Mail Code 161, P.O. Box 13087, Austin, Texas 78711-3087 OR Hand Delivery, Overnight Mail Mail Code 161, 12100 Park 35 Circle, Building C, Third Floor, Room 300 W, Austin, Texas 78753	Originals of Form PI-1S, Core Data Form, all attachments. Not required if using ePermits[2].
Revenue Section TCEQ	Regular, Certified, Priority Mail Mail Code 214, P.O. Box 13088, Austin, Texas 78711-3088 OR Hand Delivery, Overnight Mail Mail Code 214, 12100 Park 35 Circle, Building A, Third Floor, Austin, Texas 78753	Original Money Order or Check, Copy of Form PI-1S, Core Date Form. Not required if fee was paid using ePay[3].
Appropriate TCEQ Regional Office	To find your regional office address go to www.tceq.texas.gov/assets/public/comm_exec/pubs/gi/gi-002.pdf or call (512) 239-1250	Copy of Form PI-1S, Core Data Form, and all attachments. Not required if using ePermits[2]
Appropriate Local Air Pollution Control Program(s)	To find your local air pollution control programs go to www.tceq.texas.gov/permitting/air/local_programs.html or call (512) 239-1250	Copy of Form PI-1S, Core Data Form, and all attachments

Reset Form

[2] ePermits located at www3.tceq.texas.gov/steers/
[3] ePay located at www.tceq.texas.gov/epay/

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization (*Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN		RN

SECTION II: Customer Information

4. General Customer Information | 5. Effective Date for Customer Information Updates (mm/dd/yyyy)

☒ New Customer ☐ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

Texas GulfLink, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
803289302	32070364859	83-4468810	

11. Type of Customer: ☒ Corporation ☐ Individual Partnership: ☐ General ☐ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following:*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:

8333 Douglas Ave., Ste. 400

City	Dallas	State	TX	ZIP	77525	ZIP + 4	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(214) 712-2140		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected below this form should be accompanied by a permit application)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC.)

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Jones Creek Crude Storage Terminal

23. Street Address of the Regulated Entity: *(No PO Boxes)*								
	City		State		ZIP		ZIP + 4	
24. County	Brazoria							

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	From Jones Creek, take TX-36 NW to Highway 304 (Peach Point Road) and turn right for about 0.8 miles.

26. Nearest City	State	Nearest ZIP Code
Freeport	TX	77541

27. Latitude (N) In Decimal:	28.991416667	28. Longitude (W) In Decimal:	-95.472408333

Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
28	59	29.10	95	28	20.67

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
5171		424710	

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Crude oil storage terminal

34. Mailing Address:								
	City		State		ZIP		ZIP + 4	
35. E-Mail Address:								

36. Telephone Number	37. Extension or Code	38. Fax Number *(if applicable)*
( ) -		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☒ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	James Smith	41. Title:	Air Quality Program Manager

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(281) 885-5458		(281) 397-6637	james.smith@c-ka.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Sentinel Midstream, LLC	Job Title:	President and CEO
Name*(In Print)* :	Jeff Ballard	Phone:	(214) 712-2140
Signature:		Date:	